metric detectors, coulometric detectors, potentiometric detectors, thermal detectors, ionization detectors, NMR detectors, EPR detectors, Raman detectors, refractive index detectors, ultrasonic detectors, photothermal detectors, photoacoustic detectors, evaporative light scattering detectors, mass-spectrometric detectors, and the like. The conduit cartridge **410** typically interfaces with the system through a manifold, which is discussed in detail below. In alternative embodiments, however, the conduit cartridge can interface directly with the system, e.g. can be connected directly to a fluid supply source, e.g. a pump and/or injector, without any intervening mechanical components, for example.

[0076] A closeable face plate **415** may be hingeably or removably attached to the system and can be closed over, or around, the system to protect the system from harsh environmental conditions, such as chemical solvents, UV radiation and the like. Supplying power and data to the chromatography system is a power and communication interface **416**. Such interfaces typically are operative to provide a power source to the system, and can also provide communication of the system to a central computer, e.g. a computer in communication with the system for monitoring test results and/or for receiving information from the system.

[0077] To achieve high reproducibility, a fixed-loop injector **414** is typically used to introduce sample into the system. Suitable fixed-loop injectors are well known to those skilled in the art and are commercially available from numerous sources, e.g. Beckman Instruments (Fullerton, Calif.). Other injectors may be used in place of the fixed-loop injector depending on the intended use of the system. For example, auto-injectors and/or auto-samplers may be used to provide for automated sampling and analysis of fluids. Suitable auto-samplers and auto-injectors are well known to those skilled in the art and are commercially available from numerous manufacturers. Optionally, the system can be programmed such that the auto-samplers and/or auto-injectors take samples at specified intervals, e.g. every 10 seconds, every minute, hourly, daily, weekly, monthly, etc., such that testing of the fluid can be performed without any input from a user. The system also includes precise microfluidics for accurate solvent gradients and includes solvent reservoirs and/or reagent magazines **418** for providing a fluid phase for running the chromatographic methods of the conduit cartridge, e.g. solvent gradients and the like. Such precise microfluidics can be achieved using numerous methods known to those skilled in the art, such as the methods described in the commonly assigned U.S. Patent Applications incorporated herein by reference for all purposes. As discussed above, typically in fluid communication with the solvent reservoirs are one or more pumps, which are operative to generate a fluid flow.

[0078] Typically the system installation can be customized such that the system can be positioned in numerous places in a facility. That is, the dimensions and shapes of the system can be designed for placement of the system in numerous areas of an operating facility, and the functions, e.g. the chromatographic methods, of the system can be tailored to perform innumerable tests desired by an end-user. In preferred embodiments, the system is placed near the sample or process to be monitored. That is, the system may be placed, either fixably or removably mounted, for example, near the fluid to be analyzed. For example, the system can be custom mounted to a conduit **420** that carries a fluid sample, e.g. river water, out of a manufacturing facility, for example. Depending upon the configuration of the system, the system can automatically sample the fluid flowing through the conduit, e.g. using an auto-sampler, auto-injector and the like, or one or more valves positioned in the conduit can be connected to the analytical system for introducing samples into the system. Alternatively, an operator can manually take samples from the conduit and can introduce the samples through a fixed-loop injector, for example, using a needle, syringe, and the like. One skilled in the art given the benefit of this disclosure will be able to select suitable positions for the system described here depending on the type of analyses to be performed by the system The fluid separation conduit cartridge typically interfaces with an analytical system through a manifold, e.g. the multi-layer laminated manifold **456** shown in FIG. **14**. Multi-layer manifold **456** may be assembled using any of the methods described above and other methods know to those skilled in the art. In FIG. **14**, the conduit cartridge **452** will be understood to be analogous to conduit cartridge **410** shown in FIG. **13**. Thus, FIG. **10** shows a first multi-layer laminated assembly, e.g. the conduit cartridge **452**, interfaced to a second multi-layer laminated assembly, the manifold **456**. As discussed, the manifold **456** is seen in the particular embodiment of FIG. **14** to be a multi-layer laminated structure and has one or more microfluidic channels for introducing fluid into or receiving fluid from the conduit cartridge. For example, the manifold **456** may comprise a first layer **458** attached to a second layer **459** which itself is attached to a third layer **460**. As can be seen in FIG. **10**, the second layer **459** typically is sandwiched between the first layer **458** and the third layer **460**. Fluid channels can be provided within and/or at the interface(s) of the layers of such manifolds. For example, layer **459** in the manifold **456** of FIG. **14** can optionally be constructed as a microfluidic substrate assembly as described above, optionally with layer **459** being formed substantially of PEEK. The layers of the multi-layer laminated manifold each can be manufactured from any of numerous materials, including but not limited to PEEK, steel, e.g. stainless steel, and the like. Different layers of the multi-layer laminated manifold may be formed of different materials. In certain embodiments, the microfluidic flow channel is between two or more of the layers, e.g. the microfluidic flow channel can extend from the third layer into the second layer and optionally into the first layer, for example. The microfluidic flow channel can be formed in one or more of the layers using numerous techniques, e.g. UV embossing, micro-machining, micro-milling, and the like. For example, a micro-channel can be etched into the second layer and the first layer such that when the second layer is assembled to the first layer a fluid-tight microfluidic flow channel is created. As discussed above, the layers can be assembled to form the multi-layer laminated manifold. For example, the layers can be assembled by welding the layers together, optionally with a gasket positioned between the layers, or can be assembled using adhesives and the like. One skilled in the art given the benefit of this disclosure will be able to select suitable methods for assembling the layers of multi-layer laminated manifolds suitable for use with multi-layer conduit cartridges disclosed here. Preferably, the manifold comprises at least a first microfluidic channel in fluid communication with a solvent reservoir and with an input orifice of the conduit cartridge. Thus solvent may flow into the conduit cartridge through a microfluidic channel in